EARTH ENGINEERING
CONSULTANTS, INC.

November 7, 2012

Fort Collins Truck Sales
700 North College Avenue
Fort Collins, Colorado 80525

Attn: Mr. Charlie Meserlian

Re: Soil Description and Limitation Report/3rd Street Pavement Section Design
Buckingham Place, Second Filing
Fort Collins, Colorado
EEC Project No. 1122103

Mr. Meserlian:

Earth Engineering Consultants, Inc. (EEC) personnel have completed the "soil description and limitation" evaluation requested for the referenced project. That evaluation included a review of readily available data concerning identified bedrock, soil and groundwater conditions at the site and readily available data concerning potential recoverable mineral resources defined in accordance with H.B. 1041 principally through review of the United States Geological Survey (USGS), the Colorado Geological Survey (CGS) publications. A listing of the references reviewed as a part of the evaluation is included with this report.

We understand this project involves development of two (2) approximate 6,000 square foot parcels north of Lincoln Avenue and east of 3rd Street in Fort Collins, Colorado. The proposed development area is located in the Northeast Quarter of Section 12, Township 7 North, Range 69 West of the 6th Prime Meridian, Larimer County, Colorado.

Surface drainage at the site is generally to the south with an elevation difference on the order of approximately one (1) to two (2) feet from the northeast corner of the parcel to the southwest corner of the property. This site is within the flood plain area of the Cache La Poudre River. No permanent structures appeared to be located on the parcel at the time of our site review. An existing residential development, Buckingham Place, is noted

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to the west of the parcel and commercial developments noted south and east of the proposed development area.

The purpose of this evaluation was to identify potential geologic hazards and identify subsurface conditions which could indicate the presence of commercially extractable mineral deposits as defined in accordance with H.B. 1041 which may conflict with the development intended. The conclusions and recommendations presented in this report are based upon the review of the listed literature and previous experience with similar geologic conditions in this area. Preliminary pavement section recommendations for 3rd Street at this location are also included with this report.

Soil/Geologic Review

The site geology presented in this report is based upon review of listed literature and maps, and previous experience with similar geologic conditions in this area. The locations of geologic features are approximate and should be considered accurate only to the degree implied by the methods used to identify those features.

The project site lies in the Colorado Piedmont Section of the Great Plains Physiographic Province. The Colorado Piedmont is an elongated trough in the Great Plains, adjacent to the Front Range of the Southern Rockies. The Colorado Piedmont was formed when uplift of the area in Miocene times (5-10 million years ago) produced an increase of stream erosion resulting in scouring next to the foothills and outlying areas. The Piedmont is bordered by the southern Rockies to the west, Great Plains escarpment to the northeast, and Palmer Divide to the south.

Structurally, the site lies on the western edge of the Denver Basin, a thick accumulation of Paleozoic and Mesozoic Era sediments involved with down-warping in the basin area and uplift of the adjacent highlands. Small anticlinal folds occur adjacent to the Front Range. It is our understanding that faulting has not taken place in the recent historic past in this area.

The United States Department of Agriculture Soil Conservation Survey map describes the surficial soils mainly as clay loam. The alluvial clay loam soils are derived from sedimentary bedrock which overlies Cretaceous Age Pierre Shale on the property.

The surface soils are identified as the Loveland clay loam, and Table Mountain loam according to the Soil Survey of Weld County, Colorado, USDA and SCS, 1980. The Pierre Shale Formation in this area generally consists of marine sandstone, siltstone and claystone containing bentonitic lenses which typically exhibits low to high shrink-swell potential.

Soil Descriptions and Limitations

In review of the soils present at this location from the Soil Survey of Larimer County, topographic maps, aerial photographs and our experience with similar conditions, we believe the geologic hazards associated with the site are flooding, unstable surficial soils, unstable cut banks, and potential frost heave and shrink-swell potential of cohesive lenses within the Pierre Shale Formation bedrock.

The effects of the unstable cut banks, low strength and shrink/swell potential of the soils and bedrock strata can be reduced by careful planning prior to construction at the site. The effects of flooding can be reduced with an effective drainage plan. A geotechnical exploration should be conducted for the overall development and at each building site to identify if these conditions exist.

Radon Potential

Radon gas is a colorless, odorless, tasteless gas which occurs naturally in the earth from radioactive decay of earth materials. Naturally occurring radon gas can accumulate in buildings posing health risks. We recommend that preliminary radon mitigation measures be incorporated in the construction of the homes at the site and that homes be tested for radon after a normal living routine has been established.

Sand and Gravel Potential

The Atlas of Sand, Gravel, and Quarry Aggregate Resources-Colorado Front Range Counties-Colorado Geological Survey Special Publication 5-B was used to gain a general overview of the property. The CGS publication indicates that this parcel is within an aggregate resource area 1T, an aggregate source area. Sand and gravel operations within the Cache La Poudre river basin have been located northwest, south and southeast of this parcel in terrace and flood plain deposits.

Coal Potential

The Colorado Geological Survey classifies the area of the project site to be within a low potential area for coal formation and recovery. A review of the Colorado Division of Mineral and Geology database (a Division of the Colorado Department of Natural Resources) was performed to locate nearby active and historical coal mining operations. No coal mines are reported in the vicinity of this property.

Based on the available information and geology of the area, we conclude that no deposits of coal are located on the property which are of commercial grade or are an economical resource.

Oil and Gas Potential

A review was completed of the Colorado Oil and Gas Conservation Commission (COGCC) database (a Division of the Colorado Department of Natural Resources) and *Oil and Gas Fields Map of Colorado: Colorado Geological Survey Map Series 26.* Maps of oil and gas well locations created by the COGCC indicate no oil or gas wells on the site.

Based on the available information, the sedimentary bedrock units located beneath this parcel are known to produce oil and gas from within the general Wattenberg Field. However, due to the manner in which oil/gas is recovered, development of the site should not greatly impact the extraction of this resource.

Metallic and Non-Metallic Minerals

A review of the Colorado Division of Mineral and Geology database (a Division of the Colorado Department of Natural Resources) was performed to locate nearby active and historical mining operations. No metallic or non-metallic mineral mines were listed in the vicinity of the project site.

Based on the available information and geology of the area, we believe that no deposits of metallic or non-metallic minerals are located on the property which are of commercial grade or are an economical resource.

Uranium and Vanadium

A review of the available information from the Colorado Geologic Survey (a Division of the Colorado Department of Natural Resources) indicates that no deposits of Uranium are present in the area of the project site.

Based on the available information and geology of the area, we believe that no deposits of uranium or vanadium minerals are located on the property which are of commercial grade or are an economical resource.

General

Based on review of available information as outlined above, it is our opinion the referenced site does not contain economically recoverable mineral resources, unless otherwise noted, which would be impacted by the proposed development.

Preliminary Pavement Section Design

Based on review of the City of Fort Collins Master Sheet Plan, we expect 3rd Street to be classified as a local residential 2 lane roadway. We anticipate the in-place subgrade likely is comprised of silty/clayey sand overlying granular alluvial materials.

Base on the above outlined design assumptions and on Table 10-1 from The Larimer County Urban Area Street Standards (LUCASS) we suggest assuming a street section for preliminary design purpose consisting of 4 inches of hot bituminous pavement over 6 inches of aggregate base course. That street section would be supported on a prepared, stable subgrade.

Final pavement design should be completed after any wet utilities have been installed within the roadway and subgrades constructed to be within ±6 inches of anticipated top-of-subgrade. The final design would include advancing test borings in the roadway to evaluate in-situ subgrade conditions. Alternative subgrade preparation procedures and/or alternate pavement sections might be required based on the results of the field/laboratory evaluation.

We appreciate the opportunity to be of service to you on this project. If you have any questions regarding this report, or if you require additional information, please do not hesitate to contact us.

Very truly yours,
Earth Engineering Consultants, Inc.

Reviewed by:

COLORADO REGISTERED PROFESSIONAL ENGINEER
23357
11-7-12

Gary J. Higgins, P.G.
Senior Engineering Geologist

Lester L. Litton, P.E.
Principal Engineer

cc: Mr. Troy Jones – troy@architex.com

REFERENCES

1. Tweto, Ogden Geologic Map of Colorado, USGS, 1979.

2. Schwochow S.D., Shroba R.R., and Wicklein P.C., Sand, Gravel, and Quarry Aggregate Resources - Colorado Front Range Counties (Special Publication 5-A);; Colorado Geological Survey, 1974.

3. Schwochow S.D., Shroba R.R., and Wicklein P.C., Atlas of Sand, Gravel, and Quarry Aggregate Resources - Colorado Front Range Counties (Special Publication 5-B);; Colorado Geological Survey, 1974.

4. Colton R.B. and Fitch H.R., Map Showing Potential Sources of Gravel and Crushed-Rock Aggregate in the Boulder-Fort Collins-Greeley Area, Front Range Urban Corridor, Colorado; U.S. Geological Survey Miscellaneous Investigation Series Map I-855-D.

5. Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/ accessed [11/7/2012].

6. Colorado Department of Natural Resources, http://dnr.state.co.us/index.asp

7. Colorado Division of Minerals and Geology, http://mining.state.co.us/

8. Colorado Oil and Gas Conservation Commission, http://oil_gas.state.co.us/